

Fore wing with the basal area and an oblique patch from middle of costa to termen suffused with brown; a curved black line just before middle; the postmedial line obliquely curved from costa to vein 2, where it is retracted to lower angle of cell and very strongly angled outwards on vein 1; the termen silvery from vein 4 to below 2, where it runs inwards for some way; a wedge-shaped subterminal brown band from costa to the silvery mark; cilia brown. Hind wing with curved medial black line, with spots before it below cell and on vein 1: the apical area with a subterminal brown line and apical patch; a medial black patch on terminal area traversed by an obliquely sinuous orange line with ill-defined silvery ocelli beyond it.

Hab. LOUISIADES, St. Aignan (*Meek*). *Exp.* 14 mm.
Type in Coll. Rothschild.

[To be continued.]

LXIII.—*Descriptions and Records of Bees.*—LII.
By T. D. A. COCKERELL, University of Colorado.

Megachile fortis, Cresson, var. *vestali*, var. nov.

♂.—Runs exactly to *M. fortis* in Friese's table ('Das Tierreich'), and agrees with Cresson's description except as follows:—Pubescence, except on under part of cheeks, fulvous, becoming a very rich fox-red dorsally; hair of thorax above not concealing the densely granular-punctate surface; tegulae piceous, with a tuft of red hair in front; a large patch of deep red hair above each spine on anterior coxae; anterior femora broadly blackened in front and behind, but honey-coloured above and below, the entire apical part above black; keel of sixth abdominal segment very broadly truncate at apex; middle of apex (beneath the keel) merely obtusely rounded, not forming a subacute tooth.

Hab. Halsey, Nebraska, on the sand-hills, Aug. 27, 1911 (*A. G. Vestal*).

This is possibly a distinct species, but more probably a variety of *M. fortis*. It is a very handsome insect. *M. fortis* was described from Texas, but a very large collection of Texas *Megachile* now before me does not contain the species.

I formerly had quite a wrong idea of *M. fortis*, Mr. Fox having determined for me as *fortis* a red-haired variety of

M. comata from the Gila River. In Ann. & Mag. Nat. Hist., July 1900, p. 10, I give a long list of localities for *fortis* in New Mexico, remarking that *comata* is not a distinct species. As a matter of fact, the insect I had was *M. comata*, and I did not know the real *fortis*. Friese, in 'Das Tierreich,' remarks that a *fortis* I sent him had the middle coxæ armed; this was really *comata*.

Megachile gemula albula (Lovell and Cockerell).

On examining a paratype male *M. gemula*, Cresson, from Georgia, I find that it is so closely related to *M. albula* from Maine that I believe the latter must rank as a subspecies. The true *gemula* has the outer side of the hind tibiæ and tarsi and middle tibiæ covered with black hair; in *albula* it is especially noticeable that the hair of the middle tarsi is shining pale reddish, while the hind tibiæ are more or less pale-haired on the outer side. In true *gemula* the second abdominal segment is black-haired at the sides and along the posterior margin, in *albula* this hair is mainly pale.

M. gemula albula is also found at Beulah, New Mexico, and I have collected it in the Harvard Botanical Garden, Cambridge, Mass.

Megachile vancouverensis, Provancher.

This species is to be added to the fauna of the United States, having been collected at Olympia, Washington State, 1896 (*Tregor Kincaid*). It is closely related to *M. gemula* and *albula*, so much so that I had considered it a variety or race of the latter. It is, however, distinguished by the prevailing pale hair of the abdomen, that on the third segment black only at sides. The hair fringing the hind tarsi behind is pale orange, whereas in *gemula* it is black. It is, however, orange-fulvous in *albula*, which is really intermediate between *gemula* and *vancouverensis*, though readily separated from both.

Megachile chrysorrhœa, Gerstaecker.

Tegwani (Dec. 30, 1908) and Lion's Stead (Feb. 6, 1909), S. Africa (*C. K. Brain*); Langenburg, L. Nyassa, Feb. 1898 (*Fülleborn*).

Megachile ferox, Smith.

This has hitherto been known only from the male. A female before me (Ararat, Australia, *C. E. P. Hill*; Nat.

Mus. Victoria, 20) is in general like the male, but the legs are black, with red claws and creamy-white spurs. The lower edge of the clypeus is straight and without tubercles, a character separating it from the very similar *M. derelicta*, Ckll. Ventral scopa white, fuscous at extreme apex; dorsal orange-ferruginous hair-patch covering fifth and sixth segments, except at sides, and extreme base of fifth.

This is also very like *M. heliophila*, Ckll. ined., from Brisbane, but *heliophila* is about 12 mm. long and has the mandibles coarsely strigate and sparsely punctured, while those of *ferox* show three shining longitudinal ridges, with channels between. The abdominal hair-patch of *heliophila* is brownish golden rather than red.

Megachile frugalis, Cresson.

Cresson described this form from a single male collected in Texas. I have since received it from Southern California; a new locality is San Gabriel Mts., near Pasadena, 1750 ft., July 15 (*F. Grinnell*). Thirteen males and ten females come from Cotulla, Texas, nearly all May 11 and 12, 1906 (*Crawford and Pratt*); six females and one male are from flowers of *Parkinsonia*, three females and nine males from *Monarda punctata*, one female was on *Verbesina encelioides*.

A male was taken at Cotulla, March 27 (*Jones and Pratt*). Seven females are from Devil's River, Texas, May 3 and 6, at *Monarda citriodora*, collected by F. C. Pratt. One female is from Atoka, Indian Territory, at *Asclepias tuberosa*, collected by F. C. Bishopp.

The female is a comparatively narrow parallel-sided form like the male; it differs from *M. inimica* and *heterodonta* by the minutely punctured rugulose clypeus, which has the anterior margin, except at sides, thickened and shining. The clypeus carries much erect black hair. The ventral scopa is white, with a faint creamy tint, black on the last segment. In Friese's table ('Das Tierreich') the female runs to 15, but is quite distinct from *M. addenda* and *pollicaris*. Superficially the female is very like *M. verbesinae*, Ckll., but the sculpture of the clypeus is entirely different. See also 'Canadian Entomologist,' Aug. 1903, p. 215.

Megachile decipiens, Lovell and Cockerell.

This species was described from two males collected in Maine. I have before me two females from New Hampshire (Littleton, *C. M. Weed*; Hanover, *C. M. Weed*) which are,

I am confident, the same species. They were in Dr. W. H. Ashmead's collection, and were named by him *M. addenda*, Cresson, a species to which they have little resemblance. They are very close to the Rocky Mountain *M. sapellonis*, Ckll., differing principally by the smaller size (length about 15 mm.). The vertex, mesothorax (except in front), and scutellum have much black hair; middle of clypeus and supra-clypeal area very smooth and sparsely punctured; lower margin of clypeus dentate, as in *sapellonis*; ventral scopa entirely dilute orange or yellowish white; wings dusky. The abdomen is conspicuously shiny. The male is readily known from that of *sapellonis* by the fuscous hair on thorax above and the smaller size.

Megachile indianorum, sp. n.

♂.—Length 1.4 mm., width of abdomen 5½.

Black, with red legs; wings pale brown; face covered with creamy-white hair; eyes green; antennæ black, not broadened at apex; tegulæ ferruginous, finely punctured; mesothorax dullish, strongly and closely punctured, with extremely scanty pale hair, no white hair-lines in front; scutello-mesothoracic suture with a moderate amount of white hair; pleura densely covered with white hair; legs bright ferruginous except the coxæ and trochanters, the middle and hind femora somewhat suffused with blackish; anterior coxæ with short, stout, flattened spines; anterior tarsi simple, but with a thick fringe of white hair behind on the first four joints; hair on inner side of tarsi pale orange; middle tarsi also with a white hair-fringe behind; hind margins of abdominal segments with narrow entire white hair-bands; keel of sixth segment (apparent apex) rounded, entire, bent downwards; hind margin of sixth segment with four short triangular teeth, the middle ones further apart than either from a lateral one; venter dark reddish.

Hab. Andmore, Indian Territory, July 11, 2 ♂ (*C. R. Jones*). Type in U.S. National Museum.

Very close to *M. deflexa*, Cresson, described from a single male collected in Kansas, and perhaps only a subspecies, but *deflexa* has the hair of the face yellow, that of mesothorax black, the tegulæ piceous, and the middle and hind femora black. Another closely related species is *M. mucorosa*, Ckll., which is much smaller, and has very much larger teeth on the apical margin of the sixth abdominal segment.

Megachile recisa, sp. n.

♂.—Length 10 mm.

Rather robust, black, with the hair mostly rather dull white; head and thorax above very densely and finely punctured, but shining; head seen from in front rounded, a little broader than long; face covered with long white hair, vertex with fuscous hair; antennæ simple, not especially long, dark, the fourth joint red beneath; mandibles hairy; hair of disc of mesothorax (which is scanty) and of scutellum fuscous, of rest of thorax white; tegulæ rufo-piceous, densely punctured. Wings rather dilute fuliginous. Legs with white hair; femora black, the anterior ones beneath with two conspicuous lines of white hair, the surface between them shining; tibiæ black, red at apex, the anterior pair also red in front and behind, but only apically on outer side; tarsi light red, the anterior ones slightly broadened, the third joint beneath with an intense black oval spot; anterior coxæ with rather short stout spines in the midst of long white hair. Abdomen shining, the hind margins of the segments with pale hair-bands, that on first reduced to a large white patch on each side, that on the third, and especially that on the fourth, suffused with ochreous; fifth segment covered with very pale appressed ochreous hair, sixth with white hair except the keel; keel (apparent apex) of sixth segment reddish, shining, broadly and squarely truncate, but with a rounded median emargination; at each extreme side of the segment is a sharp red tooth; in the middle, beneath the keel, are two prominent red spines, curving laterad; venter covered with white hair.

Hab. Kewell, Australia (Nat. Mus. Victoria, 14).

Related to *M. modesta*, Smith, but that has the two basal joints of the two anterior tarsi "white, flattened and expanded." Another example of *M. recisa* is from Brisbane (*H. Hacker*, Queensland Mus. 74); collected Sept. 24, 1912.

Megachile ramulipes, sp. n.

♂.—Length about 10 mm.

Of the parallel-sided type, but not slender; black, with the pubescence mostly white, that on the face dense and shining clear white; head and thorax above strongly extremely densely punctured, the punctures on the vertex larger than those on the thorax; antennæ very long and slender, the short third joint red beneath, the flagellum very faintly brownish beneath, the scape very short; mandibles

tridentate, the inner tooth prominent, no basal tooth below; tegulae piecous, stained with rufous. Wings hyaline, faintly dusky. Legs black, the tarsi ferruginous apically; anterior coxæ unarmed; anterior tarsi slender, greatly elongated (more than twice as long as the tibiæ), their length being 4 mm. Abdomen short, the hind margins of the segments shining brown; first segment and bases of second and third with pale hair; second segment very densely and quite strongly punctured, contrasting with the third, which is shining, with fine weaker punctures; fourth segment (except partly at base, especially laterally), fifth and sixth covered with light orange-fulvous hair; apical margin of fourth segment and all of fifth and sixth with the tegument red; keel of fourth segment obtuse, hardly salient, obscurely bilobed; no apical spines.

Hab. Kewell, Australia (Nat. Mus. Victoria, 15).

Perhaps nearest, on the whole, to *M. rhodogastra*, Ckll., but easily separated by the long, slender, anterior tarsi and other characters.

Megachile fultoni, sp. n.

♀.—Length about 7 mm.

Narrow, *Heriades*-like, black, the apical segment of the abdomen (above and below) bright ferruginous red; ventral scopa white; wings dusky hyaline.

So close to *M. hackeri*, Ckll., that I at first thought it identical, but it is readily separated by the following characters:—Flagellum red beneath; the broad clypeus tridentate, one tooth in the middle, the others at the extreme sides; mandibles fringed with orange hair beneath; fifth and sixth abdominal segments much less hairy, and the little hair present not distinctly yellowish.

♂.—Like that of *M. hackeri*, but first r. n. meeting first t.-c. (which is not true of the female *fultoni*); lobes of sixth abdominal segment not so close together; flagellum red beneath.

Hab. Purnong, Australia (*S. W. Fulton*; Nat. Mus. Victoria, 59); female=type. The male is from W. Australia (Nat. Mus. Victoria, 58).

On account of the locality and the different venation the male is perhaps a distinct species, but, if so, this cannot at present be satisfactorily demonstrated.

Megachile generosa cleomis (Cockerell).

Megachile cleomis, described from New Mexico, is a

western subspecies of *M. generosa*, Cresson, described from North Carolina and Georgia. *M. pruinosa*, Friese (a pre-occupied name), agrees very well with *cleomis*, and must be regarded as a synonym. The females resembling *cleomis* may be separated as follows:—

- | | |
|---|----------------------------------|
| Only the last two abdominal segments, seen from above, with black hair at sides | <i>lippie</i> (Ckll.). |
| Abdominal segments 2-6, seen from above, with black hair at sides | 1. |
| 1. Last abdominal segment above without depressed whitish hair, but with much black hair; mesothorax shining, punctures well separated (from a paratype, collected in New Jersey) | <i>addenda</i> , Cresson. |
| Last abdominal segment above with depressed whitish hair | 2. |
| 2. Hair of mesothorax except at sides, and of scutellum except behind, black | <i>generosa</i> , Cresson. |
| Hair of thorax above pale, with black intermixed | <i>generosa cleomis</i> (Ckll.). |

Megachile parallela, Smith.

A specimen which I examined in the British Museum, supposed to be *parallela*, had the hair of vertex and disc of mesothorax dark brown. I now believe it is not genuine *parallela*, of which Smith says that the hair on disc of thorax is slightly ochraceous. Smith's description seems to be accurate, as it agrees very well with *M. facunda*, Cresson, which is no doubt a synonym. *M. sexdentata*, Rob., also appears to be the same species. On the other hand, the female of *parallela* is not *pruina*, Smith, but is correctly described by Robertson under *sexdentata*. The males of this species are very variable in size and the colour of the pubescence, which may be greyish white or strongly ochraceous. The female is known by the fine, pruinose, pallid tomentum on the last dorsal abdominal segment, and the joints of the middle tarsi greatly produced and ciliated at their apical corners.

Megachile rufolobata, sp. n.

♂.—Length about 14 mm.

Robust, with parallel-sided abdomen; black, with the fifth and sixth abdominal segments bright ferruginous red; face covered with shining golden hair, but all the other pale hair clear white; vertex, a large discal patch on mesothorax, and anterior part of scutellum with fuscous hair; mandibles broad, black, with two strong apical teeth and a long very

oblique inner cutting-edge; vertex and thorax above extremely densely punctured; antennæ black; tegulæ piceous. Wings strongly smoky, brown; second s.m. very long. Legs black, the tarsi with long white fringes; anterior coxæ with short, stout, sharp spines; anterior tarsi simple but rather thick, the apical part of the basitarsus and the second joint whitish, the two apical joints ferruginous; the other tarsi black. Keel of sixth abdominal segment (apparent apex) with two large rounded lobes; much long white hair on under side of abdomen. Hair on inner side of hind tarsi brownish ferruginous.

Hab. 60 miles N. of Perth, W. Australia (Victoria Nat. Museum, 2; received from C. French).

Closely allied to *M. ignita*, Smith, but that species, as described by Smith, has the hair of the cheeks pale fulvous, and that of "the thorax beneath and on the sides, and also on the legs," pale bright yellow. Smith also says that the anterior coxæ are unarmed, and this is not a mistake, as it is repeated by Meade-Waldo in *Ann. & Mag. Nat. Hist.*, Nov. 1912, p. 477. Meade-Waldo says abdomen not coarsely punctured in *ignita*; I should call that of *M. rufolobata* rather coarsely punctured, but this may not be significant.

I have a female from F. Smith's collection, determined by him as *M. ignita*, and it is certainly not the female of *rufolobata*, but it is perhaps really Smith's female *erythropygæ*.

Megachile victoriae, Cockerell.

A male taken by S. W. Fulton at Purnong (Nat. Mus. Victoria, 106) shows that when fresh the fifth abdominal segment is clothed, except at sides, with pale fulvous hair; the patch is relatively inconspicuous, not like the bright red dense patch of some species.

Megachile simplex, Smith.

The female varies greatly in size. Meade-Waldo states that the type is 10 mm. long. One from Brisbane (*H. Hacker*) is about 8½ mm.; one from Ararat (*Hill*; Nat. Mus. Victoria, 19) is 12 mm. I cannot see any difference except that of size.

Megachile cetera, Cockerell.

A variety of the female (var. *a*) from S. Australia (*Waterhouse*; Nat. Mus. Victoria, 111) has the hair of head (except lower part of cheeks), thorax (except sternal region), and

abdominal bands a lively yellowish fulvous. Structurally it agrees with *cetera*.

Megachile relictæ, sp. n.

♀.—Length 10 mm.

Parallel-sided, black, with white pubescence, giving the whole insect a hoary appearance. Head ordinary; eyes brown; face rather broad, with much white hair; flagellum bright ferruginous beneath; vertex well punctured; clypeus transversely swollen or obtusely ridged, coarsely punctate above, below, where it slopes inward, shining and scarcely punctured, the lower margin with two large, widely separated, triangular teeth; mandibles broad, not greatly elongated, slightly reddish near apex, with a narrow band of yellowish hair parallel with the cutting-edge; labrum long, with a pair of subapical teeth; thorax above densely rugoso-punctate; tegulæ reddish, stained with piceous. Wings clear. Legs black, the tarsi red at apex, inner side of tarsi with pale fulvous hair; hind tarsi not broad. Abdomen punctured, with greyish-white hair all over, giving it a dusty appearance; faint linear bands can be seen on the hind margins of the first three segments, but the abdomen can hardly be called banded; a dense patch of white hair on each side of first segment; ventral scopa entirely white.

Hab. Tennants Creek, S. Australia (*Field*; Nat. Mus. Victoria, 37).

A peculiar species, without near relatives. By the pruinose abdomen it resembles *M. fulvomarginata*, Ckll.; by the clypeal structure it resembles *M. clypeata*, Smith.

Megachile vestitor, Cockerell.

A male from W. Australia (*Duboulay*; Nat. Mus. Victoria, 11) is only about $9\frac{1}{2}$ mm. long, breaking down the distinction of size between *vestitor* and Smith's *fabricator*. I now think that the two are probably identical, but, if so, Smith's account of the anterior tarsi is ambiguous and insufficient.

Megachile remeata, sp. n.

♀.—Length a little over 12 mm.

Parallel-sided; wings dilute brownish, the apical half of the anterior wings more strongly so; ventral scopa white, with a few hardly noticeable dark hairs at extreme apex; first abdominal segment covered above and at sides with long white hair; second and third with dense white apical

hair-bands, broadly interrupted in the middle, the other segments without any pale bands or spots; eyes converging above; clypeus low and very broad, subcarinate in middle, with a tooth on middle of lower margin; mandibles very long, parallel-sided, bidentate at end, the inner margin with orange hairs; anterior tibiæ in front with a long (lanceolate), smooth, shining, hairless area, the inner side of these tibiæ densely covered with silver-white hair; flagellum obscurely marked with red beneath; mesothorax closely and minutely punctured, but shining between the punctures.

Hab. W. Australia (*Duboulay*; Nat. Mus. Victoria, 5).

Closely resembles *M. semiluctuosa*, but differs in the bidentate mandibles, the slightly instead of strongly arched margin of clypeus, the much more finely and minutely punctured mesothorax, and the shining finely punctured abdomen.

Megachile revicta, sp. n.

♀.—Length 15 mm.

Parallel-sided; wings with the apical half brown, the basal hyaline, in the manner of *M. fabricator*, but the third abdominal segment without hair-bands or spots, and the mandibles are different. This is another species superficially like *M. semiluctuosa*, from which it differs thus:—Head seen from in front round, the vertex rounded (not flattened), its scattered black hairs short, very minute; antennæ, in one plane, broadly rounded (not expanded) and obtuse at tip; vertex shining, with large, partly confluent punctures; hair of middle of face yellowish, of sides of face creamy white, of clypeus very pale yellowish mixed with dark brown; clypeus low and very broad, coarsely rugoso-punctate, the lower edge practically straight, with a median nodule; mandibles extremely broad and massive, quadridentate, but the innermost tooth feeble, a line of ochreous hair running parallel with the cutting-edge; labial palpi shorter; mesothorax densely and coarsely rugoso-punctate, almost like a *Lithurgus*; ventral scopa wholly creamy white; white band at apex of second abdominal segment only about half as broad, very clear white, as also the hair covering first segment; no lateral spots of hair on third segment; abdomen shining, with very large irregularly placed punctures; tegulæ shining black, with a curious fringe of pale hairs curling over the base and ends, covering more than half the surface; hair on inner side of hind tarsi dark fuscous, on the others more reddish.

Hab. 60 miles north of Perth, W. Australia; received from C. French (Nat. Mus. Victoria, 1).

The following key separates several similar-looking females:—

Lower edge of clypeus with conspicuous teeth; mandibles very broad	<i>lucidiventris</i> , Sm.
Clypeus not so, though there is usually a median denticle or tooth	1.
1. Mandibles very long	2.
Mandibles broad, relatively short	3.
2. Mandibles bidentate	<i>remeata</i> , Ckll.
Mandibles tridentate	<i>semiluciosa</i> , Sm.
3. First abdominal segment with white hair right across	<i>revicta</i> , Ckll.
First abdominal segment with lateral patches of white hair	<i>suffusipennis</i> , Ckll.

Halictus musicus, sp. n.

♀.—Length about 10 mm.

Rather robust, the abdomen large; black, the abdomen with a faint green tint, especially on the first two segments; head broad; inner orbits strongly, evenly concave; front finely punctured, the punctures running into striæ, the shining surface visible between; supraclypeal area and clypeus convex, shining, with sparse distinct punctures; clypeus with a median groove; tongue broad dagger-shape; maxillary palpi red apically; flagellum obscurely reddish beneath; head and thorax with thin dark fuscous hair, but pale ochreous at sides of metathorax, extending up to sides of scutellum; postscutellum with a large patch of dense orange tomentum, and the same sort of tomentum covers the anterior corners of mesothorax, adjacent parts of prothorax, and region of the tubercles, making a large elongate patch on each side of the thorax in front; mesothorax in middle smooth and subglaucous, sparsely punctured, but densely punctured at sides; pleura finely and densely striate; area of metathorax large, bounded by a strong sharp rim, its surface with strong but obtuse irregular rugæ. Legs black, with coarse black hair; hind femora with a curled soot-coloured scopa; hind spurs simple; tegulæ black, shining, the anterior part finely roughened and with piliferous punctures, the anterior margin testaceous. Wings dilute fuscous, nervures and the large stigma reddish; third s.m. short; first r. n. reaching extreme basal corner of third s.m. Abdomen very finely punctured, without hair-bands or patches; at apex and beneath with coarse black hair.

Hab. Tambourine Mountain, Australia, Oct. 27, 1912
(*H. Hacker*; Queensland Museum, 82).

In the patch of orange tomentum on the postscutellum this agrees with *H. peraustralis*, Ckll., but that species has the legs mainly red and the metathoracic area quite different. Except for the orange tomentum, there is a very close superficial resemblance to *H. davidis*, Ckll., but the metathorax is entirely different.

Chelostomoides pratti, sp. n.

♂.—Length 10–11½ mm.

Black, with the small joints of tarsi clear ferruginous; form elongate, parallel-sided, narrow; pubescence in general white, but fuscous on vertex, and more or less so on discs of mesothorax and scutellum, short and black on the discs of the fourth and fifth abdominal segments, very pale yellowish on inner side of tarsi. Head rather large, round seen from in front; face densely covered with white hair, sparsely mixed with black on clypeus; cheeks with long white hair beneath; mandibles black, tridentate, without any large basal tooth below; labrum very broad and relatively short, sparsely punctured; vertex and front shining, but well punctured; antennæ long, the flagellum very faintly reddish beneath; mesothorax and scutellum shining but strongly punctured; two short white hair-bands on mesothorax anteriorly, pointing toward middle; white hair in scutello-mesothoracic suture, and a tuft of white hair behind each tegula; postscutellum shining, with sparse minute punctures; area of metathorax dull and granular; tegulæ dark brown, finely punctured. Wings clear hyaline, nervures piceous. Anterior coxæ and tarsi simple. Abdomen shining, but strongly punctured, the hind margins of the segments narrowly testaceous; conspicuous white hair-bands on apical margins of first three segments at sides, and rather weakly (especially so on third) continued across the middle; basal hair-bands are also developed, strong and continuous on segments 4–6; keel of sixth segment with two strong, triangular, sharp, widely separated teeth; apical margin (beneath) undulate, shining, without distinct lobes or teeth; fourth ventral segment (almost hidden by third) with a light reddish margin.

Hab. San Diego, Texas (*Jones and Pratt*). Thirty-eight specimens were collected, March 25, 1908.

Related to *C. rufimanus* (Rob), from which it is known by the darker legs and clear wings. There is a superficial

resemblance to *Megachile frugalis*, Cresson, which, however, has long spines on the anterior coxæ, though these are not mentioned by Cresson.

A male of *C. pratti* was taken by Mr. J. C. Crawford at Cotulla, Texas, May 11, 1906, at flowers of *Parkinsonia*. Three females, two from Cotulla (March 27, 1908, Jones and Pratt; May 5, 1905, Crawford) and one from San Diego (March 25, 1908, at flowers of *Marrubium vulgare*, collected by Jones and Pratt) can only belong to *C. pratti*. They have the following special characters:—Clypeus very deeply incised or emarginate, the incision bounded by large, shining, pointed teeth directed outward; upper part of clypeus with a prominence; flagellum bright ferruginous beneath except at base; labrum long, truncate at apex, with a prominent tubercle some distance from apex, bearing orange hairs directed upwards; mandibles long and stout, with three short teeth at apex; wings a little dusky (brownish); the erect pale hair of mesothorax not mixed with black; ventral scopa entirely white, with a faint yellowish tint. There is a strong superficial resemblance to the female of *Megachile occidentalis*, Fox.

Chelostomoides appears to be related to the Australian Heriadiform group of *Megachile*.

LXIV.—New Species of Tabanidæ from the Oriental Region.

By GERTRUDE RICARDO.

THESE species have been sent to me for determination by the Indian Museum. The types or paratypes are preserved in the British Museum Collection.

Chrysops pettigrewi, sp. n.

Type and four other females from Ukul, Manipur, 6400 feet, lat. 25° N., long. 94°–95° E. (Rev. W. Pettigrew).

A species allied to *Chrysops designata*, Ricardo, but the markings of the abdomen distinguish it. Wings with a dark transverse band and apical spot, a hyaline sinus present in the fifth posterior cell. Abdomen yellow at base, blackish on apical half, marked with yellowish spots. Antennæ and legs black.

Length $8\frac{1}{2}$ – $9\frac{1}{2}$ mm.

Face black, covered with bright yellow tomentum; the